REMARKS/ARGUMENTS

Claims 1-49 are pending in the instant application. Claims 7, 12-31, 34-38, 40–47 are directed to non-elected claims and are withdrawn from consideration. Claims 1-6, 8-11, 33, 34, and 39 are under examination and are rejected in the office action. Claims 1, 2 and 4 have been amended by Applicants. Applicants also added new claims 48 and 49. The amendments and the newly presented claims do not constitute new matter in contravention of 35 U.S.C. §132.

Applicants respectfully request reconsideration and allowance of this application in view of the amendments above and the following comments. Applicants respectfully submit that the amendments are fairly based on the specification and respectfully request their entry.

Specification-Objections

Applicants have amended the Specification above to delete the embedded hyperlink and/or other forms of browser-executable code, in accordance with the Examiner's suggestions. Applicants respectfully request that the objections to the Specification be withdrawn.

35 U.S.C. § 101 REJECTION OF CLAIMS 1-6, 8-11, 32, 33, & 39

Claims 1-6, 8-11, 32, 33 and 39 are rejected under 35 USC § 101 for, in the Examiner's view, lacking patentable utility. More specifically, the Examiner asserts that the claimed invention is not supported by a specific, substantial, and credible utility or, in the alternative, a well-established utility. Applicants respectfully traverse this rejection for the reasons set forth below.

Applicants first note that the utility requirement of § 101 is met either if the claimed subject matter has a "well-established" utility, or if a substantial, specific, and credible utility is disclosed in the specification.

> An invention has a well-established utility (1) if a person of ordinary skill in the art would immediately appreciate why the invention is useful based on the characteristics of the invention (*e.g.*, properties or applications of a product or process), and (2) the utility is specific, substantial, and credible.

Utility Examination Guidelines, 66 Fed. Reg. 1092, 1098 (Jan. 5, 2001). For example, "some uses can be immediately inferred from a recital of certain properties." *In re Folkers*, 344 F.2d 970, 974 (C.C.P.A. 1965) (explicitly undisturbed by *Brenner* v. *Manson*, 383 U.S. 519, 535 n.23 (1966) and *In re Kirk*, 376 F.2d 936, 949 (C.C.P.A. 1967) (Rich, J., dissenting)). In particular, when "newly discovered compounds [that] belong to a class of compounds, the members of which have become well recognized as useful for a particular purpose because of a particular property, the only reasonable conclusion is that the new compounds, also possessing that property, are similarly useful." *Folkers* at 975, *see also* MPEP 2107.02.

In the instant application, claimed subject matter comprises nucleotide sequences encoding a human RGL3 protein, which is homologous to mouse RGL3 (Ehrhardt *et al, Oncogene* 20(2):188-97 (2001); Shao *et al., J. Biol. Chem.* 275:26914-26924 (2000)), with 79 % amino acid identity and 86 % amino acid similarity over the entire length of the two proteins. p. 129 ll. 1-5 of the application. RGL3 functions as a novel guanine nucleotide exchange factor (RalGEF) for the small GTPase Ral and serves as a downstream effector for both Rit and Ras. p. 6, ll. 22-30 of the application; Shao *et al., J. Biol. Chem.* 275:26914-26924 (2000). Both human RGL3 and mouse RGL3 belong to the RalGEF family of proteins. Both RGL3s contain three functional domains: an RasGEFN domain located close to the N-terminal end; an RasGEF domain at the center of the molecule and an RA (Ras association) domain at the C-terminal end. p. 6, l. 31 – p. 7, l. 12 and Fig. 1 of the application. The RalGEF proteins, at the time the application was filed, were known to be part of the Ras signaling pathways that promote invasion and metastasis; and indeed, RalGEF-dependent transformation led to highly invasive metastasis (Ward et al., *Molecular and Cellular Biology* 21(17):5958-5969 (2001), a copy of which is submitted and cited on form PTO-1449 submitted concurrently herewith. Also well known at the time the application was filed was the use of an oncogene or tumor suppresser gene in cancer diagnosis, prognosis, and treatment. The nucleotide sequences of these genes can be used as a reference to compare to sequences from patients or healthy individuals for mutation analysis, cancer diagnosis and prognosis. The sequences can be used as substrates on microarrays for expression

analysis in cancer patients. The sequences can also be used as antisense inhibitors of the over-expressed genes in patients. The sequences can be used to produce proteins or fusion proteins useful for the diagnosis and development of therapeutics as well.

Because the claimed nucleic acid sequences of the instant application encodes the ortholog of mouse RGL3, and belongs to the RalGEF family, Applicants respectfully submit the claimed nucleotide sequences of the instant application belong to a class of compounds, the members of which have well-established utility. Applicants respectfully submit that the claimed nucleotide sequences, which are also capable of these particular purposes, are similarly useful. According to the Federal Circuit, "[t]he threshold of utility is not high: An invention is 'useful' under section 101 if it is capable of providing **some identifiable benefit**." *Juicy Whip, Inc.* v. *Orange Bang, Inc.*, 185 F.3d 1364, 1366 (Fed. Cir. 1999) (emphasis added).

35 U.S.C. § 112 REJECTION OF CLAIMS 1-6, 8-11, 32, 33, & 39 FOR LACK OF ENABLEMENT

Claims 1 – 6, 8 – 11, 32, 33 and 39 stand rejected under 35 U.S.C. § 112, ¶ 1 for lack of enablement. According to the Examiner, since the claimed invention is not supported by a specific or substantial utility or a well-established utility, the disclosure also fails to enable one skilled in the art to make and use the invention.

Applicants respectfully traverse the rejection. Applicants respectfully submit that because the claims indeed display a well-established utility for the reasons advanced above, the derivative rejection for non-enablement would be in error if reasserted against these claims. Applicants respectfully request therefore that the rejection be withdrawn.

35 U.S.C. § 112 REJECTION OF CLAIMS 1-6, 8-11, 32, 33, & 39 FOR LACK OF WRITTEN DESCRIPTION

Claims 1 – 6, 8 - 11, 32, 33 and 39 are further rejected under 35 USC § 112, first paragraph as containing subject matter that is not adequately described in the specification. Specifically, the Examiner objects to what he views as a lack of description sufficient to convey to one skilled in the art that the inventor had possession of the invention, at the time of filing, except for SEQ ID NO:1. Applicants respectfully traverse this rejection.

Solely for sake of expedition, however, and without admitting to the adequacy of the Examiner's *prima facie* case of unpatentability, Applicants have amended claims 1, 2 and 4 to more clearly set forth the claimed invention. Applicants have deleted the phrase "with conservative amino acid substitutions", added the word "complete" in between "the" and "complement" in claims 1 and 2, deleted "at least 17 contiguous nucleotides of SEQ ID NO:4,..." in claim 4, and amended claim 1 to recite specific function. Applicants respectfully submit that in view of the above amendments to claims 1, 2 and 4, as

supported by the original claims and specification, one of ordinary skill in the art can clearly determine that Applicants were in possession of the invention at the time of filing. Therefore, reconsideration is respectfully requested.

Applicants respectfully submit that the genera now claimed are fully supported by the specification and that the rejection should be withdrawn.

35 U.S.C. § 102(a) REJECTION OF CLAIMS 1-6, 8-11, 32, 33, & 39

Claims 1-6, 8-11, 32, 33, and 39 are rejected under 35 U.S.C. § 102(a) as been clearly anticipated by Shao et al, 2000 (hereinafter "Shao"). Specifically, the Examiner asserts that the cited reference discloses a polynucleotide sequence complementary to SEQ ID NO:1 (position 12 – 17) of this application. Applicants respectfully traverse this rejection for the reasons set forth below.

Applicants respectfully point out that Shao teaches the mouse RGL3 protein and nucleotide sequence encoding such. The nucleotide sequence of Shao (AF237669) is directed to the mouse RGL3 gene sequence. The current invention is directed to the nucleotide sequence encoding the human RGL3. SEQ ID NO:1 of the current invention is only about 80% similar to the mouse RGL3 gene sequence (AF237669). In addition, Applicants amended claims 1, 2 and 4. These amendments (and newly presented claims

48 and 49) clearly distinguish the current invention from Shao. Applicants submit that the current invention cannot be anticipated by the Shao reference as set forth above. Thus, Applicants respectfully request that the above rejections be withdrawn.

Early and favorable action is earnestly solicited.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on January 26, 2004.

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